



Accessible Wayfinding Systems will Start a New Era of Accessibility

Idan Meir



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>> Welcome everyone to the New York Accessibility Meetup. So happy you all joined today. We're here with Idan Meir, and we are going to get kicked off here in a second. Before we start, I wanted to give a little background. New York City Accessibility Meetup has been around for a few years now.

I think many of you are probably regulars, but welcome to newcomers. We live stream and caption all of our events. More recently, obviously, we've been hosting our events virtually. But, follow us on our YouTube page. Join our meetup group and, you know, you can keep track of upcoming events and speakers.

So then, one other note, we have, I wanted to say thank you to Equal Entry who is sponsoring the event. Thomas Logan, who is also a cohost couldn't be here today because he's in Japan and he's sleeping. But I know that I personally am very grateful for Equal Entry's support.

If you'd like to support the Meetup and sponsor in any way, you can reach out through the Meetup group in DM. Also, I'd like to thank the Internet Society of New York, Joly works with them. He's doing our audio/visual and all things tech for this Meetup including the recordings and orchestrating the

captioning, et cetera.

Final note, Diane Scott with White Coat Captioning is doing the live captions today, so thank you, Diane. OK. So on that note, I'm so excited to welcome you, Idan. I'd like to hand it over to you, and please, take it away.

>> Yeah. Sure. Thank you, Cameron and thank you, Thomas although you're not here, and all of the rest of the team. I'm a big fan and follower on Accessibility New York City for a few years. I've even been to one physical meetup about a year and a half ago, which was a great experience for me. And then, I guess it's good morning, good afternoon to some of you, it's good evening here in Israel. I'm speaking about 20 minutes from Tel Aviv, just like the whole country.

I'm here today to talk to you about the topic of accessible wayfinding systems and we'll start a new era of accessibility. Just a few words before. I just told Cameron earlier, I found it is, I guess, the first time actually giving a lecture online. I've done a lot of them physically. But now, I'm realizing it's the first time I'm doing it online. And this is the first time I'm doing this specific lecture in general.

So I hope you'll enjoy it, hope you'll find it worthwhile, I hope it'll be interesting to all of you. I've done my best. And let's just get things started. I do also want to welcome you to ask me anything along the lecture or the talk, this is called a talk, a conversation. Feel free to kind of interrupt me in the middle. By the way, that's the Israeli way of communication, interrupting each other.

So no worries. Feel free to ask me whether it's via the chat over here or just raise hand and I will be happy to listen to you. So I hope you hear me well. I see everything's fine. I'm Idan Meir, I'm 34 years old, living here, as I said. And right here and aside of playing guitars every once in a while, I've been the student at the open university here at the University, learning business and psychology. I cofounded something called Hobanana, which is a start-up for web and mobile start-ups here in Israel outside of Tel Aviv, and in the past 4 1/2 years, I'm the CEO of RightHear.

And we're going to talk a little bit about RightHear along with the conversation is part of talking about audible wayfinding systems. But in a nutshell, RightHear is an audible wayfinding system that turns public spaces into more accessible environments, mostly for people who are blind or visually impaired or basically, anyone with orientation challenges.

I got into that because my life is a story of getting lost. I'm getting lost everywhere I go, basically. I'm one of those guys that when you go with them to a new place, if it's a hotel, for example, I'll walk right out from the elevators when it's left and I'll keep doing that for the rest of the week or whatever because I'm always getting lost. And so my familiarity with the frustration of not knowing where you are and how to reach your destination is kind of the story of my life. Although,

I'm great.

This is a little bit about how I got into this. Basically, Gil and myself, we were working in a whole different concept in the beginning. And it was with a couponing and shopping experience in malls. And we realized we were working great together and we have a great technology in hands, we were looking also for something that is more meaningful. More purposeful, with better social impact within it.

I was also looking to kind of scratch my own itch, which is getting lost. And those combined, basically, right here. As I said, it's an audible wayfinding system. Again, I don't want to really discuss us or pitching right here today. I've done it the whole day today and I'm sure you're not here for that. But in a nutshell. It's a system that has a mobile app, it's a free mobile app on an iPhone, also an online portal for the venue to control.

And it basically allows users to receive audible descriptions about the environment. Answering to questions like, where am I? What's in here? What's around me? Who can I call for help? And more and more features like that. For those of you watching us through YouTube, you can just search for right here on YouTube. And for the rest, you can look around after that.

So OK. Let's talk the main topic, as I said, of today is about the new era that the audible wayfinding systems will start. This is the way, at least, I believe in. And in the next 30 minutes, 40 minutes, maybe an hour, as much as we need, we're going to discuss a bit more details and we're going to talk a little bit about the present, about the future, about the technologies that are involved, about the main challenges with this domain, and we'll try to kind of share with you some case studies along the way from what I've been able to learn or even actually personally experience with that in the past 4 1/2 years.

All right. Moving on. By the way, I hope I'll be able to see a raising hand if there will be such, if not, I'm sure you'll be able to help me with that. I'll move forward. Talking about people with orientation challenges.

We can break it down not only people tend to say, OK, audible wayfinding system, that's for the blind or visually impaired, people with some sort of sight impairment. That's not true. They're just part of the picture. People with orientation challenges are also people with, sometimes, cognitive disability or even mental disability.

From our research, there is about 5.4% out of the population, it's our research. It's not exactly accurate, to be honest. But this is what we've been able to crunch the numbers and we're talking about 18 million people in the US alone.

What do we have for these people that have some sort of

orientation challenges at the moment? When we go to the -- well, in the past year, we haven't done that so much. We didn't go through the mall too much or didn't go outside too much. But if you can remember in the normal days when we go to public spaces, whether it be the university, the workplace, or shopping mall, for example, what do we have there for those with orientation challenges?

As far as I know, and I'm happy to hear more thoughts here, mainly two main things. One is tech tile paving on the ground. And secondly is tech tile and braille signage. That is basically what we have to offer as society and public spaces for, again, people who are -- people with orientation challenges. More specifically, people blind or visually impaired.

To understand that, to understand how effective it is, I'd like to share with you this fact that I'm pretty sure many of you probably already know. It's a group of professionals in accessibility, so I'm sure many of you know that, for those that don't, only 10% out of the blind community know to read braille.

So, if that's the number. So let's put this in a very challenging situation because for those 10% to actually know to read braille, I always say there has to be one, very lucky, second, very brave, and thirdly, very, very smart. Why is that? Lucky, because they know where the sign is. To be able to read it, we have to touch it. So they need to know where the sign is. Secondly, they have to be very brave. Why is that? Who wants to touch a public surface? Nobody wants to touch a public surface, specifically, not nowadays.

And thirdly and very, very smart because even if you know where the sign is, know to read braille, even if you know, you know, being brave enough to touch it, ultimately what you'll get is something like room 210, which doesn't say a lot about where you are in relation to the environment. All in all, there's not a very effective solution for that. And people blind and visually impaired and other orientation challenges are, basically, blocked from the public spaces as far as we understand that. And when we ask them how do you get to the specific store? How do you get to the specific classroom? The answer is always with somebody.

It could be their family members or friends or anyone else. But it always with somebody. And when we think about it, accessibility is ability independence, right. It's all about providing independence. The need for that independence has been increased dramatically in the past year. Why is that? Because aside from not being able and not wanting to touch a public surface as we mentioned with the braille, another thing called social distancing.

So if a year ago you would go to that department store or shopping mall or, again, whatever it is, museum with somebody. Now, there's not necessarily that somebody that will go with you. You have to find your way to do it by yourself independently.

That's poses a lot of challenges, puts the need in the new situation, I would call that way. And that's one of the reasons why I believe, personally, that audible wayfinding system will be everywhere by 2025.

Now, I know it's recorded. I know it's on YouTube. I hope I won't embarrass myself in a few years. But, you know, this is what I believe. I believe whether it be 2025 or 2026, maybe a bit later. But in the near future, in the near coming years, public spaces will have some sort of audible wayfinding system. I don't see, by the way, the captions, but I'll slow down for the captioner.

So to prove that claim, the audible wayfinding system will be everywhere in the next few years, I would like to share with you three main reasons for that. The first one is regulation. In countries like here in Israel, having talking signs or having audible wayfinding system is already obligated. Businesses, companies, institutions are already obligated for a few years, actually, to have some sort of voice sign or vocal sign or talking sign. I don't know how to exactly translate that into English.

All you can see here on the right side of the screen is, basically, my translation to how the regulation is written here in Israel in Hebrew. What it basically says, buildings that are welcoming more than 500 people should have some sort of audible wayfinding system or should have talking signs.

This talking sign should be at the entrance. They should be next to the elevators, and they should also be in the information centers. Now, obviously, that's not a full coverage of the building that not necessarily gives the full independence experience for a blind or visually impaired visitor.

But it's an obligation that required all public spaces, whether if it's a university, a hospital, a museum, shopping mall. They said, there's a lot of examples of, you know, places that are open for all of us. On the left side, by the way, what you can see, I think I see something in the chat. Let me just, yes, there are some questions in the chat.

I'll do a pause and read some of the questions in a minute. OK. Just so I could kind of reply or answer that or I could maybe do that at the end.

Anyway, on the left side of the slide, what you can see is actually a recommendation, specifically in this case, it's right here. But in some other cases, it can be other solutions in the layout, specifically, and in the planning of the layout of a new building. The consultant of that project, specific project, have integrated right here from the planning part of the building. Saying that the awareness, at least the awareness and the understanding as well as the obligatory of doing that is already here in Israel for the past two or three years in the market. And we're pretty sure it's going to happen in more markets. We see that happening in a few other countries.

And I believe it will also be in some form or another in the USA in the next few years. So this is one reason why we believe that audible wayfinding system will be ubiquitous in 2025, after 2025. I'll do a quick pose to see your comments or thoughts here.

Yes. OK. Cameron, actually, that would be helpful if you could from time to time just to read it out loud.

>> Yeah, of course.

>> It'll be smoother.

>> Yeah, I'll synthesize a couple of points. Having an audio solution, like what you're describing in a public space that's sort of speaker might not be accessible to someone that is deaf/blind, for example.

>> Correct. Correct.

>> And also, would be inaccessible to someone who speaks a different language.

>> Correct. So we usually -- with RightHear system, for example, everything that is being aloud can also be read through the smartphone, as well, with text. And secondly, all translated to 26 different languages. But yes, that's a good point and I'm happy you pointed it out.

Anything else before I move on?

>> Yeah, quick question about integrating these sort of voice announcements with mapping applications. I have a feeling this lines up with RightHear.

>> Yes, I will get back to the cognitive things a bit later. But, yes. I hope I'll answer that a bit later. If not, we'll get back to that. All right. Cool.

So the first, again, back to the flow. The first reason I believe that audible wayfinding systems will be everywhere by 2025 is because of the regulation is looking at it and is strict into that more and more not just here in Israel, but also in other countries, and that's the first reason.

The second reason is the speed of technology. I used an image by Boston Dynamics. And this is, for those of you, I guess many of you already familiar with BostonRobotics, who knows, that might be the next guiding dog. Who knows. This type of new technologies coming up everyday now. Their speed is unbelievable. And because of that, because of the speed of technology, it just doesn't make sense thinking back, again, about the two facts I gave you all about the number of signs and the effectiveness of them. How can that make sense?

If you have so much better solutions, there's just no other reason why not having them. By the way, when you're comparing, a lot of times when people ask us about the cost and we'll get to that later. But when you're comparing accessibility audible types of ways, wayfinding accessibility, comparing them to

other accessibility efforts, whether it's an elevator, for example. It's just noncomparable. Noncomparable. So requesting this or requiring this is just, for me, sounds obvious.

Another reason, that's the three and the third and last for this part is increasing in awareness in inclusion and accessibility. The more awareness we see around it, the more efforts are being made. So I think that's pretty obvious. The reason I put here this picture of a McDonald's restaurant that is accessible with our system is because every new brand or public space that joins our specifically right here revolution or any other audible wayfinding system helps increasing the awareness around that need. So I can share with you from our experience, usually after completing successfully projects.

For example, here, we've done all of McDonald's restaurants in Israel. Usually, immediately after that, they can generate, they can promote it, they advertise this and that helps to create the awareness around the new possibilities of audible wayfinding system. Not just among other public spaces, but also, among our users, which is equally important and we'll get to that a bit later.

Moving on, so now that we have the different, we have the awareness and we understand that there's a technology exist and everything in place. What type of positioning technologies, what do we need in terms of technology to be a bit technical to have that in place? Basically, when we think about audible wayfinding systems, we need two layers. One is the positioning layer and secondly, is the mapping layer. I would like to address the positioning first. And then, mapping.

So for the positioning, different technology, a lot of technologies, I kind of focused on three of them. I know, there is ultra wideband and RFID. And there are different technologies for positioning. I put the three main technologies just because the, as far as I know, the most common at the moment in the market, the most common options that are available.

So one is ibeacon technology, the second is WI-FI and thirdly is computer vision. I can talk a lot about each one of the technologies that the pros and cons of each one of them. Why each one is better than the other or worse than the other. All of them have some advantages and disadvantages. But to try to summarize it up for this talk today, I've made this quick table. So basically, there are the good and the bad.

The good thing about ibeacon is the accuracy and it's relatively cost effective. It's not a very expensive technology. The good thing about WI-FI, I'll say, that's the good thing about ibeacon, the bad thing about ibeacon, maximal infrastructure. You have to have a lot of these, usually in your building. That's obviously, have some strength with that, more maintenance, more work, more

labor, that's the hard part of it.

Another technology is WI-FI, with WI-FI, minimum infrastructure, you need to have a few routers in place, not tens or more like that like i Beacons, that's the good thing, the bad thing is the accuracy and, sometimes, the cost.

Thirdly, there's the computer vision. With the computer vision, the good thing about it, there's no infrastructure. Nothing at all. But the bad thing about it, again, its accuracy and another point is its privacy.

I can talk long about this different technologies, there are different use cases, also. So for each use case, there are different technologies that might be fixed. Not saying that this technology is better than the other. None of them is better than the other. And just really depends what exactly is that audible wayfinding system trying to do.

Mentioning privacy. I do want to address that a little bit. Here's me in the picture with Google Glass a few years ago. I was playing with it a little bit. And there are a few privacy issues that can occur with computer vision.

One of that is obviously, if a person would like to go to restrooms, right? When it's camera eye's open, I'm not sure that the other people at the restroom would like to stay there. That's a privacy issue. Not necessarily for the user, but for his surroundings.

And another question that brings up and it's for us to think of is if relying on, because we've seen some computer vision or I would say camera based solution that are relying on another person on the other side kind of describe what is there for you. It's a question of thinking, is it really accessibility? I mean, if I'm getting instructions from somewhere, someone somewhere else, is that truly accessibility? The whole goal, again, is being independent. Being able to go wherever I like by myself without anyone else.

I guess, also without anyone else even if remotely. Something to think about. The next layer is the mapping. Mapping is a challenge. Mapping is I would say maybe even bigger challenge. There are so many buildings. So many indoor environments, each one is different. Each one is planned different. And we need to map them somehow.

On the left side, I put this Google camera how they call it, I think a tracker, where they used to go with that everywhere and kind of map the world with it. I guess they did a pretty good job with that but there's still a lot, a lot, a lot of more locations. I have no idea if and when they will finish that. Buildings keep growing all the time.

So that's, I would say, one of the biggest challenges in this domain. I know, we know that Google, Apple and all of the big players are working on different technologies, different technologies or methods to map the world. And I

might mention another technology that is doing it nowadays. Even with the best technology, you have to go to that place first to map it out. The building can build it out. I can share with you this slide.

What we see in this slide is just a normal layout of a venue. And the mapping that we do right here where we get such a mapping. So we get such a layout. The process of mapping it is usually in our case is the first part. Mapping the venue and understanding where are the main points of interest. This is where we would like to make sure a blind person, a person with visual impairment or anyone, basically, will be able to know and understand where it is, what's there, and what surrounds him.

This is an evacuation thing. We can think about the implementation of emergencies, by the way. It's also important everyone will know what is the shortest way to walk away. I won't hold us too long about this, unless any of you have questions on that. Moving on.

Let's talk about the opportunity, the opportunities of the new reality. I put here three pictures of good friends, also, users on the left side is Adi, a software engineer, and he's also blind. Also in the middle of another person. We have two Adi here and on the right side we have Karina at a bus station. I want to share a short story. Left side in this picture in the office. When I asked him, what is your biggest challenge at work? Again, he is a software engineer. He tells me, well, finding the office. Finding the restrooms. Finding the elevators, finding, you know, whatever it is in that building. And for me, it's always sounds absurd. How such a talented, such a smart person who can, you know, do things I cannot do online and with his computer, doing the simple things a lot of finding a certain place in the venue is still challenging for him.

I'm so happy we have him on our team to help us understand the need as well as the solutions for these needs. In the middle we have the other Adi with his dog and his guiding dog at the pharmacy.

The headline is the opportunities of the new reality. For today, if a blind person would like to go to the pharmacy and purchase a certain medication or certain item, you will probably need to go with somebody. Being able to do that by himself, and that could be the pharmacy or in any other place is, I think, a huge change of independence in his daily life.

And thirdly, we see here, the bus station, all the bus stations here in Israel are orally mapped within the system. So being able to go wherever you like by bus without the need of anyone else, again, is crucial and as important. Cameron, I think I see another two comments in the chat.

>> We're good. We're going to hold that to the end.

>> OK. Great. So let's elaborate a little bit more about that. So the first

kind of case study I can share with you is with Clockwork, it's an office space, shared office space in fronts. They turned their shared office space into accessible environment. And I would like to bring that as a case study because think about the opportunities in the workforce. In the workplace. I mentioned Aldi earlier, he's a talented software engineer, but how can you expect him to work for you if the simple things like finding your office or the building is still a huge challenge? I mean, I believe there's a lot of discussions in the recent years, I know, I know about great lectures we have and discussions we have in this specific meetup group about online accessibility, which is obviously super important.

But how can you really expect a blind employee to work on his computer if he doesn't even know where his desk is? For me, I believe that's one of the basics we should make sure as a workforce that are there to really provide that accessible experience for that specific employee and person. Back to this case study Clockwork installed the system just before Corona, so it's hard to understand the results there. Sorry I'm not able to share with you because of that.

But this is the first shared office space that put this audible wayfinding system in place. And that's a great way to increase the awareness that mentioned earlier. Moving on to another example. This is a picture of the badge on a small restaurant in San Diego. And next to, you know, the Trip Advisers and Yelp and other stickers on the entrance of this restaurant.

You might think to yourself, well, why would a restaurant and I mentioned earlier, McDonald's would need an audible wayfinding system. That's such a small layout. Why do they need that? Well, the answer for that is that for many people whether it's a huge complex or very small environment, that's still a maze. They have no idea where they are. So knowing that you are at that specific restaurant, knowing the open hours, knowing different information like here in Israel, for example, whether it's kosher, or not. And all of that type of information when you're there is making life much better.

Another thing is knowing what is around you. Knowing where the sitting area, knowing where the restrooms are. Knowing where the counter is and exit and so forth. Super important. So the way we think about this, as I said earlier is in a way some sort of an audible ramp for those who need that. And whether if it's a huge complex like an airport, we also done airports or hospital, or whether if it's a small moms and pops shops, that equally should be accessible with audible descriptions.

And lastly, there is the universal design aspect of this in terms of the opportunities of audible wayfinding systems, universal aspect. And in the picture now we see another good friend who is in a wheelchair. And one of the things we learned together with him is that the importance and the functionality that could

happen with a simple feature as called for local assistance.

In the picture, you see him in the supermarket. Israel's largest supermarket chain is accessible with assistance. Because one of the features is calling for local assistance, someone in the store for some sort of assistance. We learned from him that could be very helpful when he wants to reach a higher shelf.

So you might say, well, why would you need an audible wayfinding system for that? Obviously, there are some implications of the system, not necessarily in terms of wayfinding but are helpful in the building environment.

And this was one of them being able to call for someone at the store instead of going to Google, search for this brand and then their contact and then someone in the office. You know, you're probably familiar with that annoying process.

Let's talk as we discussed --

>> Idan, pause for a second if you don't mind. I have a couple of questions that I think are timely. One is about Israel's infrastructure for physical accessibility now. Asking about what sort of accommodations there are. I'm also curious about what, it seems like Israel's pretty progressive with regards to accessibility of physical spaces. That might be a more elaborate topic.

But maybe you can speak specifically to physical spaces. What kind of accommodations there are.

>> Well, yeah. I'll try to answer that. You know, and I haven't said that in the beginning but it's another important disclaimer. Although, I'm kind of almost five years in this domain, I always feel like I know nothing about it. It's such a big domain. You know, such, a lot of things going on. I'm kind of -- we kind of narrow into our niche within accessibility in general. I'm not sure I'm the right person to answer what type of requirements are there for all type of accessibility. But it is true that Israel is quite progressed with the requirements and obligations that are there.

Obviously, the awareness is very, very high for that. Yeah. I'm not sure in terms of physical disabilities. I'm not sure, the ramps.

>> You see tactile signage and tactile markings in the street? Ramps seems like something we take for granted in the states, although, should we really take it for granted?

>> Yeah. You find all of these, for all different disabilities, you'll find different requirements in the regulations. Yeah, for wheelchairs. Again, I think one of the reasons it's progressed is because it actually has, I would say, a meaningful part for the blind and visually impaired. It's not just the braille and tactile paving. It's more than that.

And it is specifically, I think it's required in more locations or more places that it's usually required in other countries. I'll give you an example. It

reminds me an example. So we have this partner who is a person who is blind. And when he, he visits London and talked to me and tell me, it was two years ago. He told me, hey, I had a great experience in London and when you go to the rail station, there's someone there that is taking you from the platform all the way to the train and then, when you stop in the next stop, there's someone to take you from the train outside of the station. Amazing. And I was really surprised asking him, what is so special about it? This is what we have here for years.

And he's like, well, we don't have anything like that in the US.

>> No. So his answer. Why do you have? Someone might tell you, well, it's there. It's over there. Well, obviously, it was a funny answer for him. Yeah. I guess there are a lot of things I probably take for granted and are unique, but it was one example. In the trains if a blind person wants to go from one place to another, it can call and kind of make sure there's someone waiting for him. Taking him from the station to the train and vice versa. And as I said, they're about, partially accessible because, again, it's all about providing independence, not relying on someone else. And I'm happy to say working with us to kind of improve that, as well.

>> Awesome. Thank you.

>> Cool. So may I move on? Move forward?

>> Yeah, there are more questions, but we can save them for later.

>> Sure.

>> Now that we discuss a little bit of the opportunities, let's discuss a little bit about challenges of the new reality. I'd like to address two main challenges. First is the standards. Different standards. Where we started and it's still a discussion is being around about the technology. Different beacons, different WI-FI, different technologies means different standards, so what would happen if a user would go with that app, which will support this technology or this technology to support that. That app, obviously, the goal is to have the same, I would say, standard for all so all could utilize and enjoy it.

That's obviously a challenge. I don't think it's solved yet. I also must say that I don't think it's that big of a challenge. It's something that, you know, more of tomorrow's challenge. For me, I believe the bigger challenge as for today is the awareness is the regulation, the call sometimes, but the standards are also important. And one expectation of the standards from the technology side, this is the left side of the slide right now. And the other challenge of the standard is with the audio descriptions themselves.

So assuming that we have the same beacons, for example, the same WI-FI, or the same product in all venues across the country, what would be the

audible descriptions that will be heard to the user? This is something to be as a standard, as well. One is wayfinder. Wayfinder is a global standard, international standard, has also been accredited if I'm not wrong from the ITU. Which, basically, gives guidelines of how to describe the built environment for a blind or visually impaired person.

Think about it, there's a standard for that, right? But remember what I said I believe 2025 we'll find audible wayfinding systems all around us? So here we go. We already creating the standards for that. I can tell you as a Hebrew speaker, that many of the guidelines not necessarily fixed with other languages in the way it's structured.

But yeah. There is a beginning of that and it's interesting to see where it's heading. The second thing I want to mention is the dashboard that we have. We have an illustration of right here the photo that allows us and the venues to, and hopefully in the future, the audio descriptions specialist, that would be a new role, as I believe in the future.

Remember that. Audio descriptions for the build environment, specialists, we already have that for, you know, for theater or for TV shows or movies. But to the built environment. We'll have that type of specialists, I assume, I believe. The online Dashboard is a tool to write and edit the descriptions at each point of interest at the venue.

Another challenge is the cost. Obviously. So when talking about the cost, there is two audiences we have to keep in mind. One is the venues. You know, there's just like with many other accessibility solutions, beautiful accessibility solutions. A lot of times the ROI questions is in the air.

If I'm a supermarket or shopping mall, why should I have that? What is the ROI? How many people with that audible wayfinding system should I expect to see a return on my investment? That's a hard question. That's a challenge. That not necessarily will happen in the new years and therefore, some sort of challenge for the cost.

Those who can offer that in the most cost effective way will win. But still, it's a question or a challenge of, I guess, venues will ask themselves what do they have? And until the time that it will be required as mentioned earlier.

On the other hand, we have our users. What about them? What's the cost for them? So there are different, as they say wayfinding systems. Nowadays, some of them cost, some of them for free, just like right here. And what I put here is an infographic out of blog post that we wrote recently. You can find it in the blog at right-hear.com. About a survey we've done audible wayfinding systems should be free. How important is it for users? The answers are pretty obvious.

Most, we've asked over 100 people from all around the world, mostly people all blind and visually impaired and the majority said yes, it should be free. I'll give you my own opinion, absolutely, it should be free. Just like a person on wheelchair do not need to pay for the ramp. Back, again, to the metaphor. Why would a blind person be paying to access a certain location or just for walking in the street?

For me, this doesn't make sense. We have to find a solution for that as society, it's interest that everyone will feel equally included.

Moving on, I'm thinking about kind of wrap up, I think that will be the wrap up. Two main, I know, I think it's 11 to the hour. So Cameron, I hope you're not mad. But it's two suggested take aways from this talk. And then, I'm really happy to kind of hear you in the audience. One is that audible wayfinding systems will be and should be everywhere. I believe it will also be everywhere.

And secondly, that awareness and professional activism as they call it is key to overcome the challenges. Just like with any opportunity in the market. And we'll also see that online happening was online accessibility and other areas. You know, we have to make sure as the professionals in this domain that we are active and saying what we believe in.

So it will be structured right, and the decision that will be made, whether from the policy decision making or the different private sector that will decide to go with one solution or another, the decision will be made right and according to principles of accessibility and independence.

Yes. This is my email and then, also, I'm on LinkedIn and Twitter and I can stop sharing, no, I'll keep it for a few more seconds.

>> No, leave it up.

>> Happy to answer your thoughts.

>> Awesome, thank you, Idan. Just for the caption, for the record, it's Idan@right-hear.com. And@IdanMeir.

>> Yeah.

>> All right.

>> Great. Thank you, Idan. And I have a couple of questions cued up. One of the points that Monica made, or I guess questions she had was around involving people with disabilities in your research. And engaging the disabled community in iterating and enhancing your product. And for that matter, building your product.

>> Absolutely. So one of the things we've learned from our very early days is that because we get to that by luck, as I said, we're not coming from that background is that it's super important for us to have those who understand the need deeply will be involved in every step that we do. As the phrase said nothing about us without us. Obviously, the same thing with building products. And I can

even share with you today that one of the reasons we call ourself RightHear, it's kind of like an internal secret, if you like. It's that the right thing for us to do as a company is to hear the audience. To hear the feedback. To hear the experts.

So it's a self-reminder for us as a company. Everyone in the team knows that. So absolutely, there are people with different disabilities involved in the process from the planning to the hands on developing of it, at least one of them. And yeah. I hope that's answered.

>> That's awesome. Follow-up on that, what sort of platforms or tools do you use to engage with audiences? I know that this is sort of an ongoing quandary for a lot of businesses and consultants, how do you engage the disability community?

>> I'm so happy for this question. I had, that was a huge challenge for us in the first three years. And in the past, because I can share with you, for example, we've done three years ago something for people who are blind or visually impaired to come and share with us, you know, and try some of the things we've developed. And it was so challenging to organize that event. First, from finding a location that is fully accessible.

I mean, even in a country like Israel, it was really hard to find a location that is accessible from all angles, as we said, in terms of public transportation all the way to different disabilities. And then, actually managing that type of event was a challenge.

And then, in the past year, and I have to say thank you, Corona, for that. And that's really a few things I can thank the COVID19 for. But this is absolutely one, a year and a half ago, two years ago, we started to kind of create online meetings, just like this one. And we invited our users, hey, there's an online Meetup, please come that hour, it's going to be virtue. People ask us, OK, but where is this happening? Well, it's virtual. Yes, but what should we tell to the taxi driver? It's virtual, and they didn't get that. But in the past year, we all live in the -- or any other different conference video tool.

In the past year, we caught that early in the days. We started to use these platforms and we, probably I can tell you that we are meeting with our mostly Israeli community on a weekly basis. Every week, usually it's on Monday 5:00 p.m. Israel time. We are meeting and discussing different topics regarding accessibility, actually. And it's just rapidly grown our community and mostly, we learn a lot from that every time.

>> That's awesome. I mean, a note on that, actually, is that Zoom and BlueJeans have made really pretty active efforts around accessibility in their platform. Trying to think, I'm not sure about Google Meet and others, but I know that BlueJeans was acquired by Verizon. So it's important when you're doing this

kind of research to know, you know, are the tools that you're using accessible themselves?

>> Yeah. And I must say, Cameron, what's beautiful about it is that we've been running three years having hard times of gathering in the same room, you know, of 30 or 50 people while blind and visually impaired. And in the past year, we've been doing that on a weekly basis. Sometimes, there are 100 people in the room. That's never happened before. That's never happened before. And that is, by the way, that's another trigger for what I said before for accessibility. Finally, the voices are being heard.

>> One question I have, this is the New York City Accessibility Meetup. I'm curious how you see these applications, your application and other technologies you talked about apply in New York City.

>> Wow. I find, I feel like it could be, as I said earlier, so many locations. And happily, we've been reached out. You know, I've talked about the increase of the need in the past year. And we haven't done anything from a marketing perspective in the past year in terms of promoting right here online. But still, we're breaking records on visitors and inbound leads every month. On a monthly, month over month or more and more. Many of them have recently come, also, from the New York area. And specifically, some of them in New York City.

Which will just show that there is more awareness, there is more interest, there is more demand, I would say for this type of solutions. So, yeah, it can be applicable in all type of venues.

I guess, the heavier the audience, different professionals that work for different derivation or businesses in the area. We still don't have our first location in this area, unfortunately. But maybe thanks to one of the participants here, we'll have our first audible wayfinding installed location in New York City.

>> Yeah.

>> Crossing my fingers.

>> That's great. One question that came up, you asked about wayfinding for elevator buttons. That in particular, that's a very specific challenge but a common one. Idan, how do you see that level of, I guess, resolution or granularity fitting into these wayfinding tools?

>> Yeah, I think I have a beautiful answer for that. Remember when we talk about the speed of technology, there are elevator manufacturers around the world. We're communicating with one of them. But now, also, connecting the elevator to the cloud. How that can help is we can, basically, call for the elevator through our smartphone. How cool is that?

Imagine that if we already know that you're at the entrance to that

building, right? Because you work there and you're using this system, and we already know that you're working on the third floor, how order the elevator for you that will be for the third floor?

So here's some example. I can share with you that we're working on things in the area of that and, I guess, we're not the only one. But this is another example of how the technology's evolving in the areas, as well. In terms of the, I believe that, again, in the next few years, we'll see tremendous development that the technology has to offer.

The tactile type of buttons will still be there, but because it's a public surface that not many people. By the way, just the common people. Nobody really want to touch the buttons in the elevators anymore. Yeah. Why -- I do it with my smartphone, just like this, I point with the corner of my smartphone on the button. Just not want to touch it. Nobody wants to touch it anymore. If you can order it through your smartphone, that's convenient.

>> Super interesting. So we've got a couple more minutes. I'm actually curious, I haven't seen any questions come up in the chat, but I have a couple more questions.

>> Please, please.

>> The issue that you described, shoot, I lost it. I was thinking about standards, is one thing. So you mentioned standards and having open standards. How do open standards apply to right RightHear's model? Is this proprietary? Is it public is it in a format you can export?

>> It's one of the challenges. You know, the way I see it and, you know, I hope it will change some way or another the future. But the way I see it, one of the assets that companies like RightHear and others have is, basically, that. It's just like usually I cannot give the example of the different taxi on demand company like Uber or Lyft type of companies. Their asset is basically the drivers and the taxis themselves. Once you take it off them, they have nothing special to offer. So a bit similar is the way it is here. If we're going to share that with the world, what do we have left with us?

It's something we like to do. And we, by the way, in a way, working on doing but not too much promoting but it's for the current situation, I feel like it's too challenging to deal with. And I feel like, as I said earlier, that's more of tomorrow's problem. And the reason is, just like you have areas in the US, correct me if I'm wrong that are more with Uber or less or more with Lyft or more with others, you might find the similar things. There are probably going to be some areas or cities in the US that are more right here enabled. And others that are more something else enabled, for example.

And that's fine. Not here, well, there are other great solutions in the

market.

>> Sure.

>> It's not like it's an aggressive competition around here. I'm in great communications of the rest of the CEOs of this landscape and they're doing great work around that. So I think, and I feel like it's OK. Like, having this measure in this area or another area, I feel like the market is big enough and as long as it doesn't cost anything. That's important. As long as it doesn't cost anything to the enduser, that's great.

>> Awesome. Well, we're at 3:00. You're welcome to stick around for a few more minutes if you like, but I wanted to say thank you, again, to Equal Entry for sponsoring the Meetup and the Internet Society of New York, Joly's generous with his expertise and time. And to Diane with White Coat Captioning doing an amazing job with the captions and to everyone that joined us today. So thanks, again, and stick around if you'd like. We can take a couple more questions. But I'd also like to encourage you to join us on the Meetup group and on Twitter A11ynyc. If you Google that, you'll find us on all the things. Thanks, again.

>> Yep.

>> Idan, can you stick around for five minutes?

>> Sure, sure. More than that.

>> OK, cool.

>> Also, anyone who wants to talk with me directly afterwards, I'm happy to do that.

>> Awesome. Cool. Yeah. Super interesting, and --

>> I think Kim, do you want to ask anything?

>> Here you go.

>> Yes.

>> Are you referring to me? Are you able to hear me?

>> Yes.

>> That was great. I was concerned about two important things as a user. One is how I will know as I go to any location which tool is being used, which app is being used and the other was how do I aim my camera or otherwise use the technology depending on the type that it is. So those are my two challenges as I go around.

>> Sure. So basically, once you download, you know, one of these apps, talk about us. If you download the RightHear app, you'll find all of the locations we are working with in the area from the one that is nearby to the one that is far away.

We also, as I said earlier, rely on the public spaces we work with, the different businesses and institutions that they will promote that are accessible with our system. This is another way for you to know that they are accessible with that.

I believe, by the way, that as I said, it will be ubiquitous in a few years. Part of the obligations, at least we have here in Israel, and I feel like it's very fair as to obligate the different businesses to share what type of accessibility aids or disability accommodations they made.

So if they'll mention they have this technology or another, it's another way for you to know. In terms of the technology, if you're using one app or another, it's basically using its own technology, you don't need to know anything. As long as you know how to use, for example, RightHear app, that will be the same experience you'll have in every location you'll go.

So it's a one-time kind of learning curve of knowing how to use it. And then, it'll basically give you the same type of experience wherever you go. It's not like here I'm going to use the camera, here I'm going to use the Bluetooth or the WI-FI if that answers.

>> Thank you very much.

>> I think there's --

>> May I ask another question?

>> Yeah, go ahead. I was actually going to clarify your question. So you go ahead.

>> Yes. So my question is actually, for example, I am here in Manhattan in New York City. And there are some places that are trying out QR codes that I can open their app. I can aim the camera and it will go across the room if I aim it up, it'll find a QR code and tell me where the platform is. That is rolling out but it's only at one station.

I have another app I can use where I get the live person and they can describe anything I want anywhere I am as long as I have access to the internet. So at the moment, that's proving the most effective. But if I go to a business, you mentioned earlier in the beginning of your presentation that there is an announcement when you get to a public place in Israel.

I would like to know the same thing. When I walk on to a property if there is some sort of an alert as to whether this facility uses QR codes, whether it uses a live person, because even a live person app, for example, most major airports in the US pay for that service so it's free for me. Also, some majors grocery store chains and things, they do it. I need to know which apps I need to open.

>> So we have, again, I can only speak for about what we have. So basically, we have this notification. Once you get near to the location that is accessible with RightHear, it'll give you location where you are, and secondly, since we're using beacons, as soon as we get to the address, another knowification. You don't need to know anything before. You'll be notified when you're in an accessible venue or area. Is that it? I hope I'm answering what interests you.

But, again, as I said, different technologies, different apps have their own advantages and disadvantages. But that's at least the way that we operate. You will be able to find this. I will share a few more things since we're staying a bit longer.

Once you have the ideal app, you'll be able to find the locations in the area at home. You'll also be able to simulate them before arriving and be able to build a mental map. Another cool feature we have. And the app will ask you how would you like to get there? With Uber, Lyft? Just walk? We'll walk with you all the way there. And being in the area, you'll get a notification, push notification and will alert you you're in a RightHear enabled area.

>> That's great. Your app is point to point. That's amazing. Very thoughtful.

>> Thank you. And by the way, we don't need the internet. I didn't mention that. We don't need the internet connection. That's actually an important point. Because as you said, some areas out of internet connection. So, basically, you can be on a flight mode in build environment, talking in a build environment. In a building environment, you can be on flight mode as long as your Bluetooth is on, you'll be able to get the notifications from the system. Which, again, helps with one of the questions here on the chat regarding the battery. It also reduces a bit of the battery because of that.

It's got to run on the chat. Even though I just said that, I do usually recommend at this point for users to go with another kind of battery bank in their package because it is all of these type of wayfinding systems as well as right here, unfortunately, still consume a lot of the power of the smartphone. So that's still something, by the way, I believe to be solved in the future smartphones.

All right. Let me see, Monica good question. OK.

>> I don't see any other questions outstanding. I mean, there's a conversation around analog versus digital kind of like what do you do when digital fails you? Because, you know, digital technologies are less robust in some ways or can be depending on the application.

You see, you know, there's the idea of disability dongles. And canes with radar on them and, you know, a lot of different technologies that actually are not. They kind of detract from the core value of White Cane, in this example, the reliability and the simplicity is actually a real advantage.

>> Yeah, but I do want to kind of emphasize, you know, the guide dog are great for avoiding obstacles. By the way, we do not do that. RightHear, many of the other folks in this domain not doing that. That's great for avoiding obstacles. We're focusing on the orientation side of things. The wayfinding side of things. Wayfinding, by the way, another way to think about RightHear is an audible signs.

That's fine, think about regular signs, if someone took the sign off, me as a sighted person, it would be hard for me to know where are the restrooms? I see no sign and I've never been there before. Similarly, if the beacon in that case or the whatever other digital enabler will work, yep, we won't know how to go there.

And if there will be a wayfinding issue. The venue and the specific space have to make sure it's always functioning. And yes, digital just like I guess many other technologies have, you know, falls, as well.

>> Yeah. One follow up on that is, oh, man, I'm spacing out today. Here's another question in the chat. Go ahead.

>> Yeah. Also, for many people who use phone for notification out and about, I think they have a spare battery for the long days, right? Because you might run out of battery, correct, yes before you are back home.

>> OK, maybe that wasn't so much a question as an observation.

>> Sure.

>> My question was going to be, in what ways is the technology or this domain broadly useful to people who are not blind? Or who don't have low vision?

>> Yeah. I'm happy you're asking this. Honestly, we're still learning. As we said in the beginning, every time I talk about it or I ask to talk about it, I feel like I don't know enough. And I always learn more and more. And I can tell you about a super interesting phone call I had yesterday from a woman that is a mother of a person, a mother of a child who has autism. And she told me something new about our solution.

Just yesterday, honestly. And she told me, you know, that could be, and that's something to be validated. She told me that could be useful for parents of children with autism when going to the theater. For the parents? How would that be helpful for the parents? Why would they need an audible wayfinding system? And she said, if the parent can go with their child and explain him all of where he is through this audible wayfinding system, we are now at the entrance, we are now next to that. Concentrate the child and reduce the stress. And that's a beautiful case that I have never thought about. And we've never tried it, honestly.

It's something I'm kind of super excited to try when the theaters will open up, again. But that's based on her own experience. So that's another example of how this back to universal design, that audible wayfinding systems will be helpful not just for the sight impaired.

Another example is, you know, there are different, I'll give you another example, actually, I learned from a doctor of a mental clinic in New York. That's very relevant for you.

This doctor, two or -- about two years ago. And he said, I love

recommending what you're doing to different patients I have. And I ask them their doctor, why are your patients not having some sort of sight impairment? And no, it's a mental clinic. So why are you recommending that? And he said, well, many of my patients have something called agoraphobia. And I didn't know what it is, but basically, part of it is fear from public spaces or crowded spaces.

And and since one of the features I mentioned earlier is the ability to call for local assistance. Now that you know that wherever you go, you have this smart button you can push on and there's someone in the area who will be able to come and help you with whatever you need, that reduced the anxiety. That helps them go there. There you go. Knowing where you are, being able to call for assistance. All those types of things help many audiences to feel more empowered, more independent.

>> Totally, yeah. And I'm seeing some comments in the chat to that effect. We're talking about wayfinding in hospitals and navigation in airports and, you know, conversations about anxiety and being able to experience a space before you go to it.

So it, it totally makes sense what you're describing.

>> Yeah. I'll share with you -- just want to share, I'm going to try to read that but it's hard for me. I think I can identify the word deaf somewhere. So something that we are working on now, it's already functioning, but it's still new is actually mostly for deaf users. And what it is is, basically, connecting to the PA systems in a certain space. Yeah.

And what we're doing there is once there is an announcement, we'll be able to take that announcement and turn it into text all the way to the user's smartphone.

>> So cool.

>> So here you go. Another audience.

>> Yeah, that's excellent. Because it solves, potentially, the translation problem, as well. Once you get something into text, you can then send it to a translation engine and you suddenly enabled tourists who are visiting a location and you've enabled a lot. And a braille reader.

>> Oh, wow.

>> Thank you, Kim.

>> Refreshable braille. Very cool. I hope you're OK, Idan. I had --

>> I'm enjoying it.

>> Yeah, good.

>> Something that someone brought up earlier and it's related to some comments around VR and AR and what wayfinding and space is is Air Pods, and I know they have recently released APIs for spatial audio and orientation. So I think

the question was, like, how can we use Air Pods or ear buds in general to augment the experience of wayfinding? I'm curious what your thoughts are.

>> Yeah, we already have that for about a year already as a feature. I must say that it's probably us to blame because we haven't promoted that feature. Just wanted to see what would be the reactions.

But we have this 3D sound feature in the app, basically if you'll put the headphones connected through your smartphone, you'll be able to hear what is in the different directions. Mostly, it will mostly work from what's right or left rather than straight and back. A little bit straight and back, but mostly right and left.

So when you go outdoors with our GPS experience, we have a full RightHear design GPS experience, whether it's for orientation or navigation. You'll, basically, be able to hear different points of interest in the area from the left side or from the right side which makes just more cool. So, yep.

>> Super cool. Do we have any other questions?

>> Yeah, I have can you hear me?

>> Yes, Monica, go ahead.

>> I was wondering for bringing the disabled community in with to help with the design, how do they bring them in but at the same time respect their privacy?

>> I hope I understand your question. But I'll try to answer that. At least, I'll try it here. There's no, we have no idea who are users are. And that's a huge challenge. We have no idea who our users are. And you can imagine the challenge of that being able to develop something that you don't know who are the end users are using it. But we made a decision and in the early days. It might change by the way, it's not a philosophy, but we're trying to keep that as close as possible. Avoid gathering any personal information out of the users.

Because of that, and Monica please direct me if I'm not answering directly what your point is. But I can tell you the way we are involving people with disabilities in our product without knowing who they are is just by promoting our different online meetups and inviting them, sharing with them our thoughts, sharing with them what we observe. We have a very active Facebook group, a very active Whatsapp group. We're in full communications with many people sharing that they're using it. But we don't see exactly how they are using it.

>> I see. Is there a feedback system they can say at this certain point, this is not the right location, you know.

>> Yes.

>> Is there a way for them to kind of create that with the people that are setting it up within their buildings?

>> Yes. Yes. Absolutely, it's part of the experience. You have this

feedback. We, hopefully, you know, and that's a great point. One of the things I was excited about talking with you today is because we truly think about as some sort of movement around what we're doing. We need the experts, the professionals in the field but we also need our users to create the change we'd like to see in the world.

The change we'd like to see, basically, places are accessible in a private way for free for different disabilities. Everything that all of us as professionals already know and are looking for. But the way to get to that reality is by all of us promoting it. I know I'm kind of asking you to promote my business here right here, of course. I truly believe it should be an industry effort that making sure the right principles, at least, are there, in place. This type of principles will influence a lot for millions of people. But also, of the practices that will be coming in the market in the next few years.

So yeah, I hope it's answered, Monica.

>> Thank you so much for all of your work in this area. We can't thank you enough.

>> It's my pleasure. It's my honor and pleasure. And again, I do want to invite you, as I said, we have no location at the moment in New York City. And we are eager to have our first one. So if you have thoughts, ideas, connections, whatever, please contact.

>> Kim, did you have something as a follow up? Yes.

>> Yes, I have a question, is RightHear planning to expand their locations across the United States?

>> Absolutely. This is our main goal for the year, actually. This is our main goal. And as I said, we're getting more and more interest from the market. There were actually two interesting inbound leads that we got from New York City in the past two months. One of them are very optimistic, the other one kind of I don't know. But as I said, obviously there are cultural differences between Israel and the US, but I feel like there's a lot of importance in creating the references in the US.

We have to have a reference in the market to be able to grow and have more and more locations. Having a first one to take the risk. We have already almost 1,000 locations worldwide, but not in New York area. So we have those pioneers in the area to kind of take the risk and having that and I believe the more that will be highly regulated and known, the bigger chance that others will follow. Once there's one big shot doing it. We are all about just finding the first partners to this vision.

>> So then, do you choose places? Do you choose the venues? Or should the venues reach out to you? Or as customers? And users?

>> Both. You know, there are three ways for that. Well, we are reaching out from time to time. It's obviously really hard for us, you know, contacting cold

call to somewhere else and, you know, other side of the world.

So we do that, but very little. We are waiting for more inbound leads to come to us. And we are also, as I said, this is one of the reasons I'm here, trying to find the right advocate, the right partners, the right people to help us bring it to the market. Users are obviously part of it.

Here in Israel, I can tell you there's many great cases where, you know, you can imagine where we go, even to an Israeli shopping mall, it's one thing when we come to them and say, hey, this is accessibility, this is important all that, and they look at us and say, OK, you're trying to sell us something. And no, we don't want to buy anything. Because it's a whole different game, right, when a user contacting the shopping mall saying, I'm visually impaired and I think you need to have something better here. Here's the recommendation. Go and check it.

There, we enter the room in a whole different way. I hope to get to a point where we have users from the New York area and the US in general who will start recommending that to different locations. I understand the users also need to have the reference. It's all about creating the first references and confidence in what we're doing.

>> Cool. Well, thanks, everyone. I'm going to pause this here. Thanks, Kim. Because I know that our captioner probably needs a break, too. So we're going to wrap up. But, yeah. If you have anymore questions, get in touch with Idan. And Idan@right-hear.com. I put the contact in the Zoom chat, as well. And, yeah. Join us on Meetup on Twitter and we'll see you next time around. Appreciate it.

>> Thank you so much. Looking forward to speaking with all of you. And it's been a real pleasure for me.

>> Take care, everyone.